IN THE CLAIMS

Please cancel Claim 28 without prejudice to or disclaimer of the subject matter presented therein. Please amend Claims 24, 26, and 27, as shown below.

1 to 3. (Cancelled)

4. (Previously presented) The method according to claim 24, wherein the grid positions corresponding to each dimension are set the same.

5. (Previously presented) The method according to claim 24, wherein the input data is expressed in one of RGB, CMY, and XYZ color spaces.

6 to 23. (Cancelled)

24. (Currently amended) A color conversion method of converting three-dimensional input data representing an image by using a three-dimensional look-up table having rectangularly spaced grid points, grid positions of the three-dimensional look-up table having non-uniform intervals ~~so as to generate output data representing a color converted image~~, the method comprising the step of performing interpolation processing using four grid points in eight grid points (P000 = P(X0, Y0, Z0), P001 = P(X0, Y0, Z1), P010 = (X0, Y1, Z0), P011 = P(X0, Y1, Z1), P100 = P(X1, Y0, Z0), P101 = P(X1, Y0, Z1), P110 = P(X1, Y1, Z0), P111 = P(X1, Y1, Z1)) of a unit rectangular hexahedron

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which includes an input data value (X, Y, Z where $X0 \leq X \leq X1$, $Y0 \leq Y \leq Y1$, $Z0 \leq Z \leq Z1$), wherein the interpolation processing comprises the steps of:

obtaining weight values (u', v', w'), based on the input data value (X, Y, Z), wherein the weight values are expressed as follows:

$u' = INT(((X-X0)/(X1-X0))L)$,

$v' = INT(((Y-Y0)/(Y1-Y0))L)$,

$w' = INT(((Z-Z0)/(Z1-Z0))L)$,

where a value of a predetermined constant (L) is greater than each of the grid intervals (X1-X0, Y1-Y0, Z1-Z0) of the three-dimensional look-up table, and is a power of 2;

determining a relationship among the weight values (u', v', w'); and

calculating a value of the output data (P) for the input data value by tetrahedral interpolation using the output values for the four grid points and the weight values, based on determining result by the following equations:

when u'>v'>w', P=((L-u')P000+(u'-v')P100+(v'-w')P110+w'P111)/L,

when u'>w'=v', P=((L-u')P000+(u'-w')P100+(w'-v')P110+v'P111)/L,

when w'=u'>v', P=((L-w')P000+(w'-u')P001+(u'-v')P101+v'P111)/L,

when w'=v'=u', P=((L-w')P000+(w'-v')P001+(v'-u')P011+u'P111)/L,

when v'>w'=u', P=((L-v')P000+(v'-w')P010+(w'-u')P011+u'P111)/L,

when v'=u'>w', P=((L-v')P000+(v'-u')P010+(u'-w')P110+w'P111)/L; and

outputting the value of the output data, wherein the output data represents a color converted image.

25. (Previously presented) The method according to claim 24, further

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comprising the steps of:

setting grid positions of the tree-dimensional look-up table; and

generating X-u', Y-v', and Z-w' tables to obtain the weight values (u', v', w') in the obtaining step.

26. (Currently amended) A data conversion apparatus for performing color conversion processing on three-dimensional input data representing an image by using a three-dimensional look-up table having rectangularly spaced grid points, grid positions of the three-dimensional look-up table having non-uniform intervals ~~so as to generate output data representing a color converted image~~, said apparatus comprising a processor arranged to perform interpolation processing using four grid points in eight grid points (P000 = P(X0, Y0, Z0), P001 = P(X0, Y0, Z1), P010 = (X0, Y1, Z0), P011 = P(X0, Y1, Z1), P100 = P(X1, Y0, Z0), P101 = P(X1, Y0, Z1), P110 = P(X1, Y1, Z0), P111 = P(X1, Y1, Z1)) of a unit rectangular hexahedron which includes an input data value (X, Y, Z where X0 ≤ X ≤ X1, Y0 ≤ Y ≤ Y1, Z0 ≤ Z ≤ Z1), wherein said processor comprises:

an obtainer, arranged to obtain weight values (u', v', w'), based on the input data value (X, Y, Z), wherein the weight values are expressed as follows:

$$u' = INT(((X-X0)/(X1-X0))L),$$

$$v' = INT(((Y-Y0)/(Y1-Y0))L),$$

$$w' = INT(((Z-Z0)/(Z1-Z0))L),$$

where a value of a predetermined constant (L) is greater than each of the grid intervals (X1-X0, Y1-Y0, Z1-Z0) of the three-dimensional look-up table, and is a power of 2;

a determiner, arranged to determine a relationship among the weight values

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(u', v', w'); ~~and~~

a calculator, arranged to calculate a value of the output data (P) for the input data value by tetrahedral interpolation using the output values for the four grid points and the weight values, based on determining result by the following equations:

when u'>v'>w', P=((L-u')P000+(u'-v')P100+(v'-w')P110+w'P111)/L,

when u'>w'=v', P=((L-u')P000+(u'-w')P100+(w'-v')P110+v'P111)/L,

when w'=u'>v', P=((L-w')P000+(w'-u')P001+(u'-v')P101+v'P111)/L,

when w'=v'=u', P=((L-w')P000+(w'-v')P001+(v'-u')P011+u'P111)/L,

when v'>w'=u', P=((L-v')P000+(v'-w')P010+(w'-u')P011+u'P111)/L,

when v'=u'>w', P=((L-v')P000+(v'-u')P010+(u'-w')P110+w'P111)/L; and

a display, arranged to display a color converted image represented by the output data.

27. (Currently amended) A computer-readable storage medium storing a computer-executable program causing a computer to perform a color conversion method of converting three-dimensional input data representing an image by using a three-dimensional look-up table having rectangularly spaced grid points, grid positions of the three-dimensional look-up table having non-uniform intervals ~~so as to generate output data representing a color converted image~~, the method comprising the step of performing interpolation processing using four grid points in eight grid points (P000 = P(X0, Y0, Z0), P001 = P(X0, Y0, Z1), P010 = (X0, Y1, Z0), P011 = P(X0, Y1, Z1), P100 = P(X1, Y0, Z0), P101 = P(X1, Y0, Z1), P110 = P(X1, Y1, Z0), P111 = P(X1, Y1, Z1)) of a unit rectangular hexahedron which includes an input data value (X, Y, Z where X0 ≤ X ≤ X1, Y0 ≤ Y ≤

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Y1, Z0 ≤ Z ≤ Z1), wherein the interpolation processing comprises the steps of:

obtaining weight values (u', v', w'), based on the input data value (X, Y, Z),

wherein the weight values are expressed as follows:

u' = INT(((X-X0)/(X1-X0))L),

v' = INT(((Y-Y0)/(Y1-Y0))L),

w' = INT(((Z-Z0)/(Z1-Z0))L),

where a value of a predetermined constant (L) is greater than each of the grid intervals (X1-X0, Y1-Y0, Z1-Z0) of the three-dimensional look-up table, and is a power of 2;

determining a relationship among the weight values (u', v', w'); and

calculating a value of the output data (P) for the input data value by tetrahedral interpolation using the output values for the four grid points and the weight values, based on determining result by the following equations:

when u'>v'>w', P=((L-u')P000+(u'-v')P100+(v'-w')P110+w'P111)/L,

when u'>w'=v', P=((L-u')P000+(u'-w')P100+(w'-v')P110+v'P111)/L,

when w'=u'>v', P=((L-w')P000+(w'-u')P001+(u'-v')P101+v'P111)/L,

when w'=v'=u', P=((L-w')P000+(w'-v')P001+(v'-u')P011+u'P111)/L,

when v'>w'=u', P=((L-v')P000+(v'-w')P010+(w'-u')P011+u'P111)/L,

when v'=u'>w', P=((L-v')P000+(v'-u')P010+(u'-w')P110+w'P111)/L; and

outputting the value of the output data, wherein the output data represents a color converted image.

28. (Cancelled)

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